

REMARKS

Applicants respectfully request reconsideration of the above-identified patent application pending claims 2-14, 32-38, 40-41, 43 and 46 in view of the foregoing amendment and following remarks. In Claim 4 “characterised in that” has been amended to “wherein”. Claim 36 was amended to insert the word “wherein” so that the claim reads in proper dependent form. No new matter has been added. Entry of the foregoing Amendments is respectfully requested. Claims 2-14, 32-38, 40-41, 43 and 46 are pending. There are two independent claims provided. Claim 43 is independent and claims 2-14 depend (directly or indirectly) from independent claim 43. Claim 32 is independent and claims 33-38, 40-41 and 46 depend (directly or indirectly) from claim 32.

The Examiner’s “Response to Arguments”

On page 6 of the Office Action, the Examiner concludes that the applicants prior arguments “are moot in view of the new grounds of rejection.” But then, without further explanation, the Examiner concludes that “the amendment necessitated the new grounds of rejection.”

Applicants do not see where minor clarification amendments to improve the grammar and clarify choice of words in the claims, e.g. the clarification of Claim 43 “necessitated” new grounds of rejection. Therefore, applicants respectfully request that the Examiner, since a Request for Continued Examination has been filed, reconsider the previous rejections and consider the argument presented herewith.

35 U.S.C. §102(b) Rejection

Claims 32, 35, 38 and 40 were rejected under 35 U.S.C. §102(b) as anticipated by Baer et al. (U.S. Patent 5,321,331). The Examiner refers to Figure 1 in Baer et al. and alleges a chemical sensor, first part a piezoelectric quartz crystal in (16) and a second part (12). The Examiner also points to the second part (12) which has a gasket (32) that the Examiner contends “defines an abutting surface onto which the first part rests.” The Examiner also points to an inlet channel (44) and an outlet channel (46). The reference numbers are taken from Figure 1 of Baer et al. Applicants respectfully traverses this rejection because Baer et al. does not describe each and every limitation in independent claim 32.

Independent claim 32 contains limitations that require (1) “said abutting surface and a portion of the abutting part closest to the abutting surface is made of an elastic material; and (2) “being sealingly covered by the crystal when the first and second parts of the piezoelectric sensor arrangement are moved from an open position to a closed position.” Therefore there are at least two limitations in claim 32 that are neither taught nor suggested in Baer et al.

As anticipation requires that each and every limitation in a claim be disclosed in a single prior art reference, anticipation cannot be established because two limitations from independent claim 32 are missing from Baer et al. Therefore, claim 32 is not anticipated by Baer et al.

Dependent claims 35, 38 and 40 were also rejected as anticipated by Baer et al. However, claims 35, 38 and 40 each depend directly from claim 32 and incorporate the two above-noted claim limitations that are neither taught nor suggested in Baer et al. Therefore, in view of the two missing claim limitations in claim 32, claims 35, 38 and 40 are also not anticipated by Baer et al.

Further, claim 35 provides “a ridge having a smooth upper surface.” Yet Figure 1 in Baer et al. shows a ridged surface not a smooth surface. Moreover, claims 38 and 40 contain further limitations that are also not disclosed nor suggested in Baer et al. Specifically, claim 38 provides that the inlet and outlet liquid sample channels “are arranged close to the periphery of the recess and diametrically opposed to each other.” But Figure 1 in Baer et al. shows that the inlet (44) and outlet (46) channels are in the center, not the periphery. Similarly, claim 40 provides for the flow cell element as one piece. Yet Figure 1 of Baer et al. that the Examiner references, shows that the flow cell is clearly two pieces, not one piece. Therefore, the additional limitations of dependent claims 35, 38 and 40 are also not disclosed or suggested in Baer et al.

Accordingly, applicants respectfully request withdrawal of this anticipation rejection in view of the fact that Baer et al. does not disclose each and every limitation in claims 32, 35, 38 and 40.

35 U.S.C. §103 Rejections

Claims 2, 7, 8, 14 and 43 were rejected as unpatentable under 35 U.S.C. §103 over Baer et al. as described above, in view of Kösslinger et al. (U.S. Patent 6,196,059 B1). As the Examiner does not separately address dependent claims 2, 7, 8 and 14, applicants shall focus on the limitations provided in independent claim 43. Initially the Examiner alleges that the only missing elements not found in Baer et al. are that Baer et al. does not disclose: (1) a measuring device; (2) the first part does not comprise “a means for accommodating the PQC”; and (3) the first part and the second part are moveable with respect to one another. The Examiner points to Kösslinger et al. Figure 5, col. 5 lines 45-68, and claim 2 as disclosing the allegedly missing elements. Applicants respectfully traverse this rejection because: (A) Baer et al. is missing many more claim 43 limitations beyond the three mentioned by the Examiner; (B) Kösslinger et al. does not disclose or suggest the allegedly missing elements from claim 43; and (C) there are surprising results provided in the specification that are secondary consideration that must be considered before a conclusion of obviousness is reached.

A. Baer et al. is further not disclosing claim 43 elements including (i) a signal source, and (ii) elastic material as item 32 from Figure 1 is not described in the Baer et al. specification. Therefore

the primary reference Baer et al. is missing far more claim elements in the 43 that the Examiner alleges it contains. Moreover, Kösslinger et al. does not disclose or suggest either of the foregoing two claim elements that remain unaccounted for in this rejection. Accordingly, neither Baer et al. nor Kösslinger et al. disclose or suggest the claim 43 required elements of a signal source or an elastic material. Therefore, a *prima facie* case of obviousness has not been established.

B. The Examiner pointed to three parts of Kösslinger et al. as allegedly disclosing a flow cell for accommodating a PQC substrate. However, the Kösslinger et al. flow cell, described in col. 5 lines 45-68 referenced by the Examiner, is how it is removed or re-inserted, not how the flow cell can open or close, which is a central feature of the presently claimed invention. Claim 2 in Kösslinger et al. does not even address the issue of the first part and the second part being moveable, relative to each other. Therefore, in view of the fact that Kösslinger et al. does not disclose or suggest what the Examiner alleges are the missing elements of Baer et al., no *prima facie* case of obviousness can be established.

C. The specification (see, for example, published PCT patent application page 6 lines 13-18 and page 4 line 18 to page 5 line 2) distinguishes the presently claimed invention over Kösslinger et al., with the difference in commercial manufacturability and costs. Both are valid secondary considerations that must be considered before a conclusion of obviousness is reached. Therefore, there are secondary considerations that must be considered before a conclusion of obviousness is reached.

In addition, claims 2, 7, 8 and 14 provide additional limitations to claim 43 that each were not disclosed in either Baer et al. or Kösslinger et al. Specifically, claim 2 provides that the flow cell element is removable. This is a distinction from Kösslinger et al. noted in the specification (paragraph spanning pages 4-5). Further, claims 7, 8 and 14 provide specifics regarding the configuration of the sensor element, none are disclosed in Kösslinger et al. Accordingly, the Examiner failed to establish a case of *prima facie* obviousness for claims 2, 7, 8 and 14 in addition to not establishing *prima facie* obviousness for independent claim 43.

Accordingly, dependent claims 2, 7, 8, 14 and independent claim 43 are patentable over Baer et al. in view of Kösslinger et al.

Claims 3 and 4 were rejected under 35 U.S.C. §103 as unpatentable over Baer et al. (primary reference) in view of Kösslinger et al. (secondary reference) as applied to claims 2, 7, 8, 14 and 43, and further in view of Ganter (U.S. Patent 4,548,514) (tertiary reference). The Examiner alleges that the primary and secondary references do not disclose “the hardness of the elastic gasket” but that Ganter does. Applicants respectfully traverse this rejection because (1) the claimed invention discloses “elastic material” and not in the form of a gasket, and because (2) independent claim 43 is patentable over Baer et al. in view of Kösslinger et al.

The Examiner has not established a *prima facie* case of obviousness because claim 43 describes an abutting surface made from an elastic material. However, Ganter, as admitted by the Examiner, describes an O-ring, not a surface. The gasket described in Baer et al. is neither an O-ring in Ganter, nor a surface as provided in claim 43. Therefore, a *prima facie* case of obviousness was not established in the prior rejection of claim 43 over Baer et al. in view of Kösslinger et al. Adding Ganter for the harness of an O-ring does not make up to the deficiencies in not disclosing or suggesting the subject matter of claim 43. Therefore, dependent claims 3 and 4 (that depend from claim 43) are patentable over Baer et al. in view of Kösslinger et al. and further in view of Ganter.

Claims 33 and 34 (which both depend from claim 32) were rejected under 35 U.S.C. §103 as unpatentable over Baer et al. in view of Ganter (U.S. Patent 4,548,514). Similar to the prior rejection, Examiner alleges that Baer et al. does not disclose “the hardness of the elastic gasket” but that Ganter does. Applicants respectfully traverse this rejection because no *prima facie* case of obviousness has been established that claim 32 is unpatentable over Baer et al. Therefore, adding Ganter and its O-rings to Baer et al.’s gaskets still does not disclosure or suggest claim 32’s “said abutting surface and a portion of the abutting part closest to the abutting surface is made of an elastic material.”

More specifically, the Examiner has not established that Baer et al.’s gasket is an entire surface that is described in claim 32. In view of this failure to establish *prima facie* obviousness with regard to the surface in independent claim 32, dependent claims 33 and 34 (which depend from claim 32 and incorporate all of the limitations of claim 32) are patentable over Baer et al. in view of Ganter irrespective of whether or not the hardness of Ganter’s O-rings fall within the hardness of the elastic material on a surface in claim 32.

Claims 36, 37 and 46 (which each depend from claim 32) were rejected under 35 U.S.C. §103 as unpatentable over Baer et al. in view of Caron et al. (U.S. Patent 5,992,215). The Examiner alleges that Baer et al. does not disclose “the dimensions of the device” but that Caron et al does. Applicants respectfully traverse this rejection because no *prima facie* case of obviousness has been established that claim 32 is unpatentable over Baer et al. Therefore, adding Caron et al. and its dimensions to Baer et al. still does not disclosure or suggest claim 32’s: (1) “said abutting surface and a portion of the abutting part closest to the abutting surface is made of an elastic material.” or (2) “being sealingly covered by the crystal when the first and second parts of the piezoelectric sensor arrangement are moved from an open position to a closed position.” Therefore there are at least two limitations in claim 32 that are neither taught nor suggested in Baer et al.

More specifically, the Examiner has not established that Baer et al. (1) gasket, or (2) movement of the first and second parts are disclosed or suggested in Baer et al. In view of this failure to establish *prima facie* obviousness with regard to the surface in independent claim 32 and movement in independent claim 32, dependent claims 36, 37 and 46 (which depend from claim 32 and incorporate all of the limitations of claim 32) are patentable over Baer et al. in view of Caron et al. irrespective of whether or not the dimensions of Caron et al. fall within the dimensions of dependent claims 36, 37 and 46 or not.

Claim 41 (which depends from claim 32) was rejected under 35 U.S.C. §103 as unpatentable over Baer et al. in view of Sheffler (U.S. Patent 4,569,438). The Examiner alleges that Baer et al. does not disclose “the material from which the gasket is made” but that Sheffler does. Applicants respectfully traverse this rejection because no *prima facie* case of obviousness has been established that claim 32 is unpatentable over Baer et al. Therefore, adding Sheffler and its gaskets to Baer et al.’s gaskets still does not disclosure or suggest claim 32’s “said abutting surface and a portion of the abutting part closest to the abutting surface is made of an elastic material.”

More specifically, the Examiner has not established that Baer et al.’s gasket is an entire surface that is described in claim 32. In view of this failure to establish *prima facie* obviousness with regard to the surface in independent claim 32, dependent claim 41 (which depends from claim 32 and incorporates all of the limitations of claim 32) is patentable over Baer et al. in view of Sheffler irrespective of whether or not the Sheffler gasket is made from the same material as the claim 32 and 41 surface or not.

In view of the foregoing response to the new rejections which were not necessitated by the prior amendments, applicants respectfully request allowance of pending claims 2-14, 32-38, 40-41, 43 and 46.

In the event there are any questions concerning this Amendment, or the application in general, the Examiner is respectfully urged to telephone the undersigned so that prosecution of the application may be expedited.

No additional fees are believed to be due at this time beyond the fee for requesting Continued Examination. However, if necessary to effect a timely response, the Commissioner is authorised to deduct the necessary fees from Deposit account No. 501249.

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